

WHAT IS CLAIMED IS:

1           1. A prismatic battery comprising a wound electrode (2)  
2   housed in a battery can (1) and which includes a separator  
3   sandwiched between positive and negative electrodes, the battery  
4   can comprising a prismatic case (11) having an opening at an upper  
5   portion thereof and a sealing plate (12) fixed onto the opening of  
6   the prismatic case (11) and comprising a pair of positive and  
7   negative electrode terminals (4), (40), an outer surface of the  
8   electrode (2) being aligned with the bottom of the prismatic case  
9   (11); current collector plates (3), (30) arranged at ends of the  
10  wound electrode (2) and connected to respective edges of said  
11  positive and negative electrodes, the current collector plates (3),  
12  (30) being connected to said pair of positive and negative  
13  electrode terminals (4), (40) by flexible lead members (5), (50).

1           2. The prismatic battery according to claim 1, wherein one  
2   end of each of the lead members (5), (50) is welded to the current  
3   collector plates (3), (30) and another end of each of the lead  
4   members (5), (50) is welded to said pair of positive and negative  
5   electrode terminals (4), (40).

1           3. The prismatic battery according to claim 1, wherein one  
2   end of each of the lead members (5), (50) is welded to the current

collector plates (3), (30) and another end of each of the lead members (5), (50) is held by said pair of positive and negative electrode terminals (4), (40).

4. The prismatic battery according to claim 1, wherein one or more protrusions projecting toward the edges of said positive and negative electrodes of the electrode (2) are formed on each of the current collector plates (3), (30).

5. The prismatic battery according to claim 2, wherein one or more protrusions projecting toward the edges of said positive and negative electrodes of the electrode (2) are formed on each of the current collector plates (3), (30).

6. The prismatic battery according to claim 3, wherein one or more protrusions projecting toward the edges of said positive and negative electrodes of the electrode (2) are formed on each of the current collector plates (3), (30).

7. The prismatic battery according to claim 1, wherein insulation members (6), (60) are arranged between the current collector plates (3), (30) and sides of the prismatic case (11) and at least one insulation member is resilient or has elasticity.

1        8. The prismatic battery according to claim 2, wherein  
2 insulation members (6), (60) are arranged between the current  
3 collector plates (3), (30) and sides of the prismatic case (11) and  
4 at least one insulation member is resilient or has elasticity.

1        9. The prismatic battery according to claim 3, wherein  
2 insulation members (6), (60) are arranged between the current  
3 collector plates (3), (30) and sides of the prismatic case (11) and  
4 at least one insulation member is resilient or has elasticity.

1        10. The prismatic battery according to claim 4, wherein  
2 insulation members (6), (60) are arranged between the current  
3 collector plates (3), (30) and sides of the prismatic case (11) and  
4 at least one insulation member is resilient or has elasticity.

1        11. The prismatic battery according to claim 5, wherein  
2 insulation members (6), (60) are arranged between the current  
3 collector plates (3), (30) and sides of the prismatic case (11) and  
4 at least one insulation member is resilient or has elasticity.

1        12. The prismatic battery according to claim 6, wherein  
2 insulation members (6), (60) are arranged between the current  
3 collector plates (3), (30) and sides of the prismatic case (11) and  
4 at least one insulation member is resilient or has elasticity.

1        13. The prismatic battery according to claim 7, wherein at  
2        least one opening or inlet which forms an electrolyte pouring  
3        opening (33) is provided in each of the current collector plates  
4        (3), (30) and at least one of the insulation members (6), (60) has  
5        a U-shape cut-out (61) to expose the at least one opening (33).

1        14. The prismatic battery according to claim 8, wherein at  
2        least one opening or inlet which forms an electrolyte pouring  
3        opening (33) is provided in each of the current collector plates  
4        (3), (30) and at least one of the insulation members (6), (60) has  
5        a U-shape cut-out (61) to expose the at least one opening (33).

1        15. The prismatic battery according to claim 9, wherein at  
2        least one opening or inlet which forms an electrolyte pouring  
3        opening (33) is provided in each of the current collector plates  
4        (3), (30) and at least one of the insulation members (6), (60) has  
5        a U-shape cut-out (61) to expose the at least one opening (33).

1        16. The prismatic battery according to claim 10, wherein at  
2        least one opening or inlet which forms an electrolyte pouring  
3        opening (33) is provided in each of the current collector plates  
4        (3), (30) and at least one of the insulation members (6), (60) has  
5        a U-shape cut-out (61) to expose the at least one opening (33).

1           17. The prismatic battery according to claim 11, wherein at  
2     least one opening or inlet which forms an electrolyte pouring  
3     opening (33) is provided in each of the current collector plates  
4     (3), (30) and at least one of the insulation members (6), (60) has  
5     a U-shape cut-out (61) to expose the at least one opening (33).

1           18. The prismatic battery according to claim 12, wherein at  
2     least one opening or inlet which forms an electrolyte pouring  
3     opening (33) is provided in each of the current collector plates  
4     (3), (30) and at least one of the insulation members (6), (60) has  
5     a U-shape cut-out (61) to expose the at least one opening (33).

1           19. A method of manufacturing a prismatic battery comprising:  
2     providing a wound electrode (2) comprising a separator  
3     sandwiched between a positive electrode and a negative electrode  
4     and spirally wound such that respective edges (21), (22) of the  
5     positive electrode and negative electrode project from axial ends  
6     of the wound electrode (2);

7           pressing and connecting current collector plates (3), (30)  
8     having one or more protrusions (32), (32) formed thereon against  
9     both ends of the wound electrode (2) such that the protrusions  
10    (32), (32) are forced into the edges (21), (22) of the wound  
11    electrode (2);

providing a sealing plate (12) for sealing an end of the prismatic battery, said sealing plate (12) having a front side and a back side, and attaching a pair of positive and negative electrode terminals (4), (40) to the sealing plate (12);

providing flexible lead members (5), (50) and connecting first top portions of the flexible lead members (5), (50) onto a back side of the electrode terminals (4), (40);

bending the flexible lead members (5), (50) to provide second base portions of the flexible lead members (5), (50) separated by a distance corresponding to the distance between the current collector plates (3), (30) attached to the wound electrode (2);

welding said second base portions of the flexible lead members (5), (50) onto the surfaces of the current collector plates (3), (30) to produce an assembly of the wound electrode (2), sealing plate (12) and electrode terminals (4), (40);

providing a prismatic case (11) having an open top;

placing insulators (6), (60) on the outside of the current collector plates (3), (30) and placing the assembly into the prismatic case (11) with insulators (6), (60) on the sides of the prismatic case (11);

welding the sealing plate (12) onto the open top of the prismatic case (11); and

introducing an electrolyte to the inside of the prismatic case (11) and sealing the case to produce said prismatic battery.